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HOLLIES FROM CENTRAL FLORIDA¹

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(Plate 224-231)

FURTHER studies of the material collected in Polk County, Florida, during the season of 1931, indicate that *Ilex arenicola* Ashe (*Ilex cumulicola* Small), *Ilex pygmaea* McFarlin, and *Ilex caroliniana* (Walt.) Trelease have in the Lake Region of Polk County, and possibly more generally throughout the range of these species, several varieties and forms which deserve names and for which descriptions and illustrations are here given. Illustrations of *Ilex pygmaea* McFarlin (PLATE 229), from the same general region, and *Ilex arenicola* Ashe f. *sebringensis* McFarlin (PLATE 224), from the vicinity of Sebring, are also included. These two were described in this Journal (34: 16-18. 1932)²

Ilex arenicola var. *transiens* is in some characteristics similar to *Ilex opaca* in that its leaves have a strongly sinuate-spinescent margin; but its smaller leaves and general habit of growth mark it as a derivative of *Ilex arenicola* Ashe, with which it is always associated.

Ilex arenicola var. *paucidens* stands in the same relation to *Ilex arenicola* Ashe that *Ilex opaca* f. *subintegra* Weatherby does to *Ilex*

¹ Papers from the Department of Botany and the Herbarium of the University of Michigan, No. 393.

² A correction to the description of *Ilex pygmaea* nov. sp. in RHODORA, 34: 17. 1932. In line 23, after "Flowers borne in few-flowered cymes on the new growth," insert: calyx of 4 broadly triangular sepals; sepals about 1 mm. long and 1.2 mm. wide, ciliate, acute or short acuminate. In line 27 after "anthers ovate, 1.4 mm. long," omit the rest of the sentence.

In line 44 after "floribus solitariis vel in cymis paucifloris in ramulis novellis," insert: sepalis 4, late triangularibus, fere 1 mm. longis et 1.2 mm. latis, ciliatis, acutis vel breviter acuminatis. On p. 18, line 3, after "antheris ovatis, 1.4 mm. longis" omit the rest of the sentence.

opaca Ait. It is the entire-leaved form of the species. Growing in the scrub with numerous dwarf oaks, it is easily mistaken for a *Quercus*.

Ilex arenicola var. *obovata* is a very distinct form of *Ilex arenicola* Ashe growing mixed with the typical form, but at once distinguished by its obovate leaves with obtuse apices.

Ilex arenicola f. *oblanceolata* is distinct only when the extreme type is found. It tends to intergrade with the typical form.

Ilex pygmaea var. *subedentata* is the entire-leaved form of *Ilex pygmaea* McFarlin and bears the same relationship to it that *Ilex opaca* f. *subintegra* Weatherby and *Ilex arenicola* var. *paucidens* do to their respective species.

Ilex caroliniana var. *jejuna* is a dwarf form of *Ilex caroliniana* (Walt.) Trelease, forming in the scrub a dense compact shrub less than a meter high. The typical form of the species usually grows in the high hammocks.

Mr. S. F. Poole collected and sent the writer material upon which two of the new forms are based. His enthusiastic coöperation has been greatly appreciated.

ILEX ARENICOLA Ashe f. **oblanceolata** f. nov. A shrub or small tree 2.5 m. high, similar to the typical form except in its distinctly oblanceolate leaf-blade which is about three times as long as wide. TYPE (in Herb. Univ. Mich.) S. F. Poole 2, rare in the deep scrub, Lake Marion, Polk County, Florida. PLATE 225. Differs from the typical *Ilex arenicola* Ashe only in the more pronounced oblanceolate leaf and at the most only an extreme variation.

Frutex vel arbuscula parva 2.5 m. alta; similis formae typicae foliis oblanceolatis exceptis, triplo longioribus quam latis. SPECIMEN TYPICUM (in Herb. Univ. Mich.) S. F. Poole 2, prope Lake Marion, Polk County, Florida. Differt a *Ilice arenicola* f. *typica* solum foliis oblanceolatis.

ILEX ARENICOLA Ashe var. **obovata** var. nov. A shrub or small tree up to 2.5 m. high, with ascending branches. Leaves coriaceous, persistent, flat, scarcely revolute, obovate, 3.5 cm. to 4.5 cm. long (usually 4 cm.) and 1.5 cm. to 2 cm. wide; margin shallowly sinuate-spinescent; apex obtuse, base acute. Flowers and fruit not seen, probably as in the typical form from which it differs in the characteristic obovate leaf-blade which is usually twice as long as broad, and the obtuse apex. TYPE (in Herb. Univ. Mich.) J. B. McFarlin 4507, rare in the deep scrub, Lake Marion, Polk County, Florida. PLATE 226.

Frutex vel arbuscula parva interdum 2.5 m. alta; ramis ascendentibus; foliis coriaceis, persistentibus, planis vel paululo revolutis, obovatis, 3.5–4.5 cm. (plerumque 4 cm.) longis, 1.5–2 cm. latis,

leviter sinuato-spinosis, apice obtusis, basi acutis. Flores et baccae ignotae. A forma typica differt foliis obovatis plerumque duplo longioribus quam latis. SPECIMEN TYPICUM (in Herb. Univ. Mich.) *J. B. McFarlin* 4507, prope Lake Marion, Polk County, Florida.

ILEX ARENICOLA Ashe var. **paucidens** var. nov. A small tree or shrub 3 to 4 m. high, with ascending branches. Leaves coriaceous, persistent, flat or sometimes slightly revolute, obovate to elliptic or sometimes oblong, 3 cm. (usually 4 cm.) to 4.5 cm. long and 1 cm. to 2.5 cm. wide; margin essentially entire, sometimes bearing one or two small teeth near the apex; apex mucronate; base acute or rounded; petiole stout, about 8 mm. long. Flowers as in the typical form of the species. Fruit spherical, red, slightly smaller than in typical *Ilex arenicola*, usually 6.5 mm. to 7 mm. in diameter. Differs from the typical form in the generally quite entire leaf. It grows in the scrub with typical *Ilex arenicola* Ashe. TYPE (in Herb. Univ. Mich.) *J. B. McFarlin* 4501, Lake Marion, Polk County, Florida. PLATE 227.

Frutex vel arbuscula parva 3–4 m. alta, ramis ascendentibus. Foliis coriaceis, persistentibus, planis vel paululo revolutis, obovatis vel ellipticis vel aliquando oblongis, 3–4.5 cm. (plerumque 4 cm.) longis, 1–2.5 cm. latis, integris, saepe cum dentibus duobus (vel uno) parvis prope apicem mucronatum, basi acutis vel rotundatis; petiolis plerumque 8 mm. longis, crassis. Flores ut in forma typica. Baccae sphaericae rubrae aliquantum parviores quam eae formae typicae *Illicis arenicolae*, diametro plerumque 6.5–7 mm. A forma typica differt foliis integris. SPECIMEN TYPICUM (in Herb. Univ. Mich.) *J. B. McFarlin* 4501, prope Lake Marion, Polk County, Florida.

ILEX ARENICOLA Ashe var. **transiens** var. nov. A compact shrub or small tree up to 2 m. high, with ascending branches. Bark of trunk and branches grayish brown. Leaves coriaceous, persistent, dark green above, yellow-green beneath, glabrous throughout, flat, scarcely revolute, elliptical or obovate, 2.5 cm. to 5 cm. long, and 1.8 cm. to 3 cm. wide; margin strongly sinuate-spinescent; apex acute or obtuse; base acute or cuneate; petiole short and stout. Flowers and fruit essentially the same as in the typical form, from which it differs in the strongly sinuate-spinescent leaf margin. Common in the scrub growing with typical *Ilex arenicola*. TYPE (in Herb. Univ. Mich.) *J. B. McFarlin* 5174, Deer Lake, Winter Haven, Florida. PLATE 228.

Frutex compactus vel arbuscula parva 2 m. alta; ramis ascendentibus; cortice trunci et ramorum griseo-brunneo; foliis coriaceis, persistentibus, superne atroviridibus, inferne luteo-viridibus, glabris, planis vel paululo revolutis, ellipticis vel obovatis, 2.5–5 cm. longis, 1.8–3 cm. latis, valde sinuato-spinosis, apice acutis vel obtusis, basi acutis vel cuneatis; petiolis brevibus et validis. Flores et baccae eis formae typicae similes. SPECIMEN TYPICUM (in Herb. Univ. Mich.) *J. B. McFarlin* 5174, Deer Lake, Winter Haven, Florida.

ILEX PYGMAEA McFarlin var. **subedentata** var. nov. A shrub or small tree 2.5 to 3 m. high. Leaves coriaceous, persistent, flat or

revolute, obovate or occasionally elliptical, 2.5 cm. to 3 cm. long and 1 cm. to 1.5 cm. wide, margin entire or sometimes bearing a few lateral teeth; apex rounded with a strong mucronate tip; base acute. Flowers not seen. Fruit subglobose, red, about 7 mm. to 9 mm. in diam., seeds prominently ribbed, about 6 mm. long. Differs from the typical form in its distinctly obovate entire leaves. It was found growing in the same scrub with *Ilex pygmaea* McFarlin. TYPE (in Herb. Univ. Mich.) S. F. Poole 5, Lake Marion, Polk County, Florida. PLATE 230.

Frutex vel arbuscula parva 2.5–3 m. alta; foliis coriaceis, persistentibus, planis vel paululo revolutis, obovatis vel ellipticis 2.5–3 cm. longis, et 1–1.5 cm. latis, integris vel aliquando dentes paucos ferentibus, apice rotundatis valde mucronatis, basi acutis. Flores ignoti. Baccae subglobosae, rubrae 7–9 mm. latae; seminibus 6 mm. longis prominenter costatae. A forma typica differt foliis integris obovatis. SPECIMEN TYPICUM (in Herb. Univ. Mich.) S. F. Poole 5, Lake Marion, Polk County, Florida.

ILEX CAROLINIANA (Walt.) Trelease var. **jejuna** var. nov. A small compact shrub 1 m. high, with numerous short gray branches, twigs usually terminating in short spurs 3 mm. to 10 mm. long, bearing many small leaves. Blade elliptical to ovate-elliptic, 2 cm. to 3 cm. long and 1 cm. to 1.5 cm. wide, glabrous, short petioled, margin serrulate; apex acute or abruptly acuminate; base acute. Flowers and fruit not seen. Differs from the typical form in its compact dwarf habit, abundance of spurs and smaller foliage. TYPE (in Herb. Univ. Mich.) J. B. McFarlin 5550, rare in the scrub, Lake Marion, Polk County, Florida. PLATE 231.

Frutex compactus parvus prope 1 m. altus; ramis numerosis brevibus griseis, virgis plerumque desinentibus in breves calcares 3–10 mm. longos multifoliosos; foliis ellipticis vel ovato-ellipticis 2–3 cm. longis, 1–1.5 cm. latis, glabris, serrulatis, apice acutis vel breviter acuminatis, basi acutis; petiolis brevibus. Flores et baccae ignotae. A forma typica differt foliis parvis, ramis multicalcaratis et habitu denso. SPECIMEN TYPICUM (in Herb. Univ. Mich.) J. B. McFarlin 5550, Lake Marion, Polk County, Florida.

NOTES ON THE FLORA OF THE STATE OF WASHINGTON—I

J. WILLIAM THOMPSON

A satisfactory flora of any western state remains to be written. Botanically speaking, the flora of the State of Washington is still in the pioneer stage. A great amount of excellent work has been done, but there are large areas which have not been even visited by a botanist. Most of the Olympic, Wenatchee, and Okanogan Mountains